

1 4. The method according to claim 3, further comprising:
2 measuring an absolute value between two of the digitized samples on a same
3 scan line that have same phases of the chrominance sub-carrier to establish the H
4 constancy value.

1 5. The method according to claim 3, further comprising:
2 measuring an absolute value between a first digitized sample and a second
3 digitized sample to establish the V constancy value, wherein the first digitized
4 sample is in a particular position within a first scan line, the second digitized
5 sample is in the same particular position within a second scan line, and the first
6 scan line and the second scan line have same phases of the chrominance sub-
7 carrier.

1 6. The method according to claim 3, further comprising:
2 measuring an absolute value between a first digitized sample and a second
3 digitized sample to establish the T constancy value, wherein the first digitized
4 sample is in a particular position within a first frame, the second digitized sample
5 is in the same particular position within a second frame, and the first frame and
6 the second frame have same phases of the chrominance sub-carrier.

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a. sampling the video signal at an integer multiple of a frequency of a chrominance sub-carrier to generate digitized samples; and

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The machine readable medium according to claim 9, the instructions further comprising:

calculating the constancy value in a horizontal dimension (hereinafter H constancy value), a vertical dimension (hereinafter V constancy value) and a temporal dimension (hereinafter T constancy value) based on the digitized samples retrieved from the storage medium.

11. The machine readable medium according to claim 10, the instructions further comprising:

measuring an absolute value between two of the digitized samples on a same scan line that have same phases of the chrominance sub-carrier to establish the H constancy value.

12. The machine readable medium according to claim 10, the instructions further comprising:

measuring an absolute value between a first digitized sample and a second digitized sample to establish the V constancy value, wherein the first digitized

1 13. The machine readable medium according to claim 10, the instructions further
2 comprising:
3 measuring an absolute value between a first digitized sample and a second
4 digitized sample to establish the T constancy value, wherein the first digitized
5 sample is in a particular position within a first frame, the second digitized sample
6 is in the same particular position within a second frame, and the first frame and
7 the second frame have same phases of the chrominance sub-carrier.

1 14: The machine readable medium according to claim 8, the instructions further
2 comprising:
3 selecting an appropriate filter to perform the separating based on the constancy
4 value.

1 15. An apparatus, comprising:
2 a. a bus;

- b. a processor coupled to the bus;
- c. a system controller coupled to the bus;
- d. a storage medium coupled to the system controller; and
- e. an improved video decoder, further comprising:
 - i. an analog-to-digital converter, coupled to the bus, to convert a television broadcasting signal into a digitized video signal and store digitized samples of the digitized video signal in the storage medium;
 - ii. a constancy detector, coupled to the analog-to-digital convert, to determine a constancy value in a horizontal (hereinafter H constancy value), vertical (hereinafter V constancy value) and temporal (hereinafter T constancy value) dimension;
 - iii. a luminance/chrominance separation engine, coupled to the constancy detector, to separate luminance information and chrominance information of the digitized video signal; and
 - iv. a display encoder, coupled to the luminance/chrominance separation engine, to optionally convert the separated luminance information and chrominance information into a first output format, wherein the first output format conforms to input requirements of a display apparatus.

[illegible]

- 1 16. The apparatus according to claim 15, the analog-to-digital converter further
2 samples the video signal at an integer multiple of a frequency of a chrominance
3 sub-carrier to generate the digitized samples.
- 1 17. The apparatus according to claim 16, the constancy detector further:
2 a. calculates the constancy value based on the digitized samples retrieved from
3 the storage medium; and
4 b. generates a selection signal to represent the dimension wherein the constancy
5 value is below a predetermined threshold value.
- 1 18. The apparatus according to claim 15, the luminance/chrominance separation
2 engine further comprises:
3 a. a plurality of filters; and
4 b. a selector, coupled to the filters, wherein the selector chooses the filter to
5 perform the separation based on the selection signal.
- 1 19. The apparatus according to claim 17, the constancy detector further measures an
2 absolute value between two of the digitized samples on a same scan line that have
3 same phases of the chrominance sub-carrier to establish the H constancy value.

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